

CLAIMS

1. A steam sterilization system for sterilizing medical waste, comprising
a cart, the cart having a front end portion, a rear end portion, and two side end portions, the cart having wheels mounted thereon to provide mobility to the cart, and the cart having a rail assembly positioned at each side end portion,
a bin for holding medical waste, the bin being removably mountable to the cart, the bin having a bottom wall, and a front wall, a rear wall, and two side walls extending upwardly from the bottom wall,
the bin having wheels mounted on each side wall of the bin and spaced such that the wheels engage the rail assemblies of the cart when the bin is being loaded onto the cart and such that the wheels engage the rail assemblies of the cart when the bin is being removed from the cart, and
a sterilization chamber, the chamber having an interior, the chamber having an opening through which access to the interior of the chamber is obtained, and the chamber having the door mounted at the opening for sealingly closing the opening against both pressure and vacuum when closed,
the chamber having a rail assembly mounted in the interior of the chamber on which the wheels of the bin ride when the bin is inserted into the chamber from the cart prior to sterilization and on which the wheels of the bin ride when the bin is being removed from the chamber and rolled back onto the cart after sterilization,
a steam valve connected to the chamber for introducing steam when desired into the chamber, and

a vacuum pump connected to the chamber for evacuating air in the chamber when desired.

2. The sterilization system of claim 1, the wheels of the cart being caster wheels.

3. The sterilization system of claim 1, further including
a latching assembly for latching the bin to the cart, the latching assembly including

a catch member mounted on the bin,

a hook arm pivotally mounted on the cart for engaging the catch member to prevent the bin from moving forward on the rail assemblies of the cart when it is desired to have the bin secured to the cart, and

a release rod mounted on the hook arm for disengaging the hook arm from the catch member when it is desired to roll the bin off of the cart.

4. The sterilization system of claim 1, the cart having a handle formed thereon for facilitating handling of the cart.

5. The sterilization system of claim 1,
the cart having a locking pin formed thereon, and
the bin having a bin locking tab formed on its bottom wall for receiving the locking pin when the bin is rolled on the cart to secure the bin on the cart.

6. The sterilization system of claim 1, further including
an alignment pin mounted on the sterilization chamber at the chamber opening,
and

a pin receiver formed in the front end portion of the cart for receiving the alignment pin when the cart is aligned properly with the chamber to permit the bin to be

rolled off the cart along the rail assemblies of the cart and into the interior of the chamber along the rail assembly of the chamber.

7. The sterilization system of claim 1, further including

a locking assembly for locking the cart to the chamber at the chamber opening when the bin is to be moved from the cart to the interior of the chamber or when the bin is to be moved from the interior of the chamber to the cart,

the locking assembly having an attachment plate mounted on the chamber near the chamber opening, the attachment plate having a slot formed therein, a shaft rotatably mounted on the cart, a handle at a first end portion of the shaft for rotating the shaft, and a cross member formed on a second end portion of the shaft and sized to fit through the slot formed in the attachment plate when the cross member is aligned with the slot and sized not to fit back through the slot in the attachment plate when the shaft is rotated to position the cross member of the locking assembly out of alignment with the slot.

8. The sterilization system of claim 1, further including

a drain valve connected to the bottom wall of the bin for permitting liquid to drain from the bin when desired.

9. The sterilization system of claim 1, further including handle grips formed in the side walls of the bin to facilitate handling of the bin.

10. The sterilization system of claim 1, further including a removable lid for covering the bin.

11. The sterilization system of claim 1, further including

a water spraying assembly for cooling the bin after sterilization, the water spraying assembly having nozzles mounted in the interior of the chamber and aligned to spray cooling water on the outside of the walls of the bin.

12. The sterilization system of claim 1, further including

a drain valve connected to the chamber to permit liquid to drain from the chamber when desired.

13. A sterilization system, comprising

a cart, the cart having a front end portion, a rear end portion, and two side end portions, the cart having wheels mounted thereon to provide mobility to the cart, and the cart having a rail assembly positioned at each side end portion,

a bin for holding items to be sterilized, the bin being removably mountable to the cart, the bin having a bottom wall, and a front wall, a rear wall, and two side walls extending upwardly from the bottom wall,

the bin having wheels mounted on each side wall of the bin and spaced such that the wheels engage the rails of the cart when the bin is being loaded onto the cart and such that the wheels engage the rails of the cart when the bin is being removed from the cart, and

a sterilization chamber, the chamber having an interior, the chamber having an opening through which access to the interior of the chamber is obtained, and the chamber having the door mounted at the opening for sealingly closing the opening when closed,

the chamber having a rail assembly mounted in the interior of the chamber on which the wheels of the bin ride when the bin is inserted into the chamber from the cart

prior to sterilization and on which the wheels of the bin ride when the bin is being removed from the chamber and rolled back onto the cart after sterilization.

14. A method of sterilizing medical waste contained in waste containment systems, comprising the steps of

placing medical waste contained in waste containment systems into a sterilization chamber,

displacing the air in the sterilization chamber with steam,

heating the sterilization chamber with the steam to an effective temperature for killing all airborne pathogens in the waste containment systems and maintaining the temperature in the sterilization chamber at or above the effective temperature until the airborne pathogens are killed,

drawing a vacuum in the sterilization chamber after the airborne pathogens in the containment systems have been killed,

introducing steam into the sterilization chamber again, and

heating the sterilization chamber with the steam to an effective temperature to sterilize the medical waste and maintaining the temperature in the sterilization chamber at or above the effective temperature until the medical waste is sterilized.

15. The method of claim 14, further including the step of

drawing a vacuum in the sterilization chamber after the medical waste has been sterilized to flash off any condensate on the medical waste.

16. A method of collecting and sterilizing medical waste with the sterilization system of claim 13, comprising the steps of

collecting medical waste to be sterilized in the bin removably mounted on the cart,

transporting the medical waste to be sterilized using the cart with the bin removably mounted thereon to the sterilization chamber,

connecting the cart to the sterilization chamber to secure the cart to the sterilization chamber and align the rail assemblies of the cart with the rail assembly of the sterilization chamber,

disconnecting the bin from the cart,

rolling the bin on its wheels from the cart into the sterilization chamber along the aligned rail assemblies, and

sterilizing the medical waste contained within the bin in the sterilization chamber.

17. The method of claim 16, further including the step of

rolling the bin on its wheels from the sterilization chamber onto the cart along the aligned rail assemblies after the medical waste has been sterilized,

connecting the bin to the cart, and

transporting the cart having the bin connected thereto to a dump location where the now sterilized medical waste may be dumped.